PULSE

Laser Light Effect

Violet 100mW DPSS (405nm)
Red 100mW DPSS (650nm)

Model: Cygnus

*image for illustration purposes only

www.pulse-light.co.uk

Safety Information

The lightning bolt within a triangle is intended to alert the user to the presence of un insulated dangerous voltage levels within the product's enclosure.

This voltage may be of sufficient magnitude to constitute an electric shock risk.

To reduce the risk of electric shock, do not remove cover of this device. There are no user serviceable parts inside. Refer servicing only to qualified service personnel.

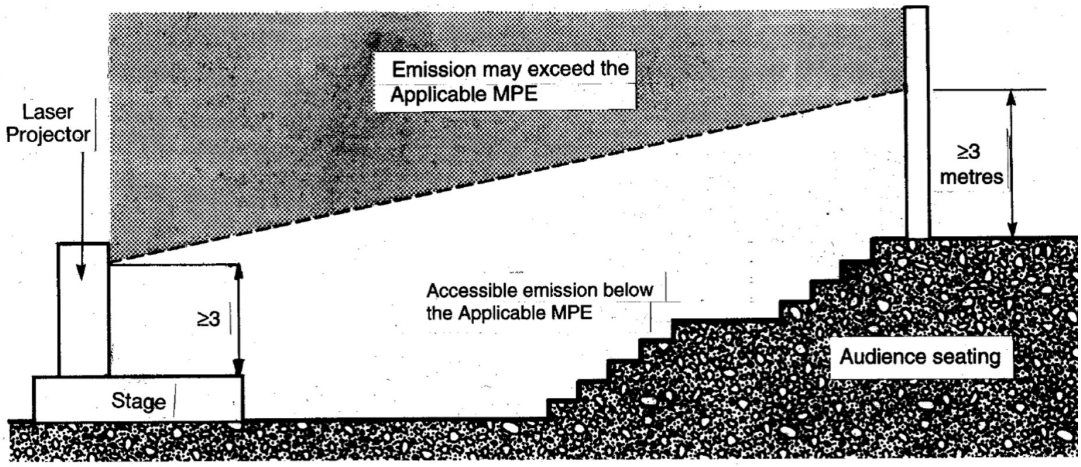
The exclamation point within a triangle is intended to alert the user to important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

CAUTION
CLASS 3B INVISIBLE LASER RADIATION
WHEN OPEN AND INTERLOCKS DEFEATED
AVOID EYE OR SKIN EXPOSURE TO
DIRECT OR SCATTERED RADIATION

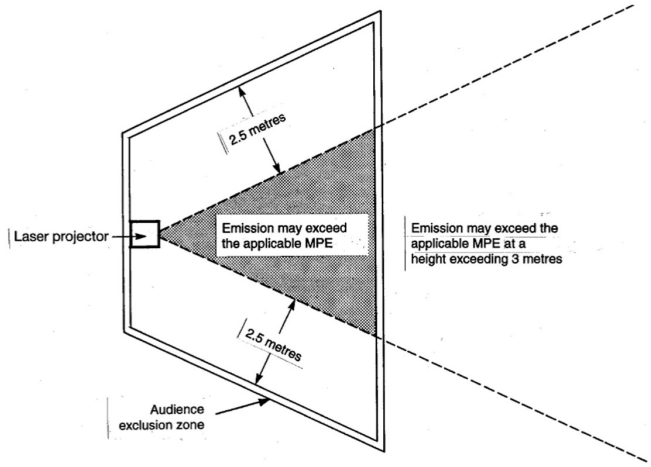
Safety Precautions

- Read and retain these instructions
- Follow all instructions and heed warnings
- Laser light effects can, if used incorrectly be very dangerous. This product should be used in accordance with the **HSE guidance publication HS(G)95 "*The radiation safety of lasers used for display purposes*"** this is available online in PDF format from **http://www.hse.gov.uk/pubns/priced/hsg95.pdf** or from book stores under **ISBN 978 0 7176 0691 7**

- Users of this equipment must be competent and fully aware of all safety implications of using laser products
- This laser effect falls into the classification 3B. Full details of usage, exposure (MPE) and safety precautions can be found in the HS(G)95 publication. Extreme care should be taken to avoid all eye contact (direct or indirect) with the beams emitted from this unit.
- Install in accordance with the manufacturer's instructions and only use indoors. The laser must be mounted so that its emission is always directed away from people and animals taking great care to avoid any objects that may reflect the beams towards people. HS(G)95 states that separation distanced of 3m vertically and 2.5m horizontally must be observed. (This was correct at time of print)



Vertical separation distances


2.5 metres
Laser projector
Emission may exceed the applicable MPE
Emission may exceed the applicable MPE at a height exceeding 3 metres
2.5 metres
Audience exclusion zone

Lateral separation distances

- Do not block ventilation openings
- Do not install near heat sources such as radiators, heat registers, stoves, or other devices that produce heat
- Do not defeat the safety purpose of the grounded plug. This plug has two blades and a third ground prong. The wide blade or third prong are provided for your

safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet

- Protect the power cord from being stressed at the plugs, convenience receptacles, and where they exit the amplifier
- Unplug the device during lightning storms or when unused for an extended time
- Refer all servicing to qualified personnel
- If the surface becomes dirty, clean only with dry cloth, do not use solvents or thinners
- This device must not be exposed to water in any way. No object filled with liquids should be placed on apparatus.
- When due for replacement fuses should always be replaced by the same type and rating. Using fuses of incorrect type and/or rating may present a dangerous situation.
- Never remove any safety warnings or markings applied to the product.
- This product is designed to be connected directly to a standard mains outlet (240Vac ~ 50Hz). Do not connect via any form of dimmer.
- Laser effects are fitted with key-switches as safety overrides, these must not be defeated neither should the keys be stored in the unit when not in use. The key switches are designed to prevent unauthorised use.
- Ensure that ventilation holes and fans are always kept clear of dust and blockages, this can be done when the unit is powered off using a clean, fine paint brush and a low power vacuum cleaner.
- Maximum loadings on stands, rigging and truss must be observed at all times. This item should also have a secondary fixing attached in the way of a safety bond wire. All rigging should be carried out by competent persons.
- Users need to be competent to operate display laser installations. They should:
  (a) Appoint a laser safety officer and provide effective supervision unless the installation is permanent, designed to operate entirely automatically and does not scan audiences; and
  (b) Ensure that all operators are trained to operate and maintain their installation safely and that they receive general instruction on laser hazards arising from visibly emitting lasers and the safety precautions that need to be taken.
- Users need to have effective systems of work for maintenance, alignment checks and setting up procedures. If safety assessment of these activities indicates that there is a risk of hazardous personal exposure, employees must be provided with appropriate protective eyewear.
- Users should determine the extent of any laser hazard areas that arise during a display event so that personal access can be controlled. The user should ensure that the minimum separation distances given in this guidance are observed (see 'Supervision' in Chapter 2 of HSG95).

Congratulations on your purchase of this

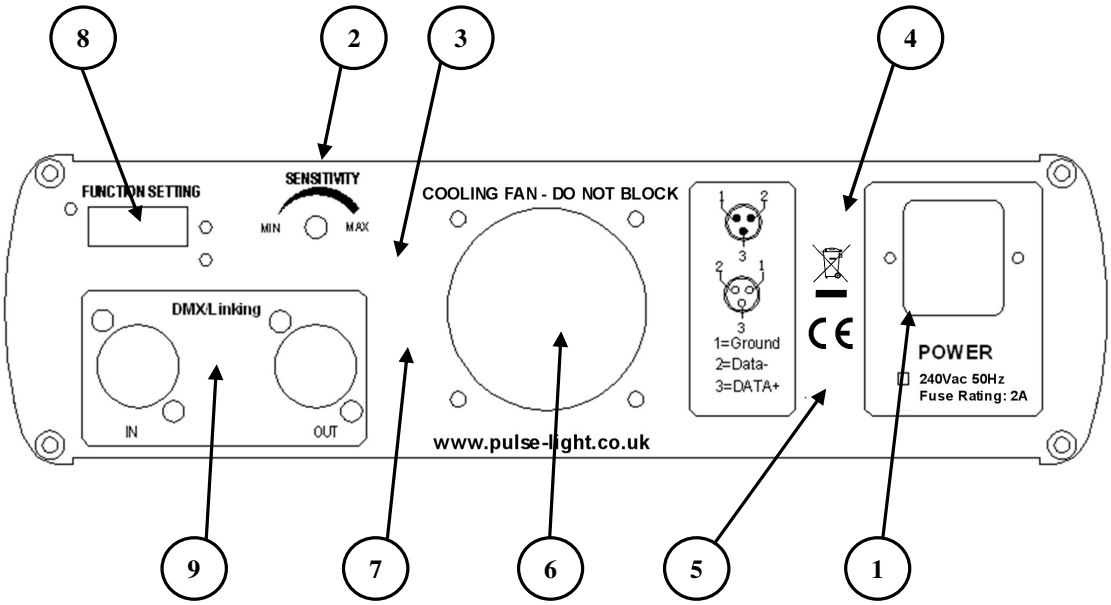
Pulse Cygnus Laser Effect

200mW output from this DPSS laser will add a different dimension to any light show. Ideal for smaller venue's. The bright, red and violet laser diodes generates a stunning effect a world apart from standard green lasers.

Features & Specifications

- Twin beam style effect
- Stunning colours from the Red & Violet laser diodes
- Fan cooled
- DMX, Sound activated, Master/Slave or auto modes
- 7 DMX Channels
- Dual laser diodes:
    - Violet: 100mW (405nm wavelength)
    - Red: 100mW (650nm wavelength)
- Mains voltage: 230Vac ~ 50Hz
- Fuse rating: 2A 250V
- Dimensions (WxHxD) 320x220x130mm
- Weight: 3.6kg

Connections & Controls:



1. **AC Power Input** – This must only be powered from a standard 240VAC, 50~60Hz mains source. Do not use with dimmer packs or electricity supplies outside this range. A fused power cord must be used.
2. **Min Max –** Adjusts sensitivity to sounds within the "bass" range of the audio spectrum. The sensitivity allows the control over the unit.
3. **Safety Hook –** Rigging of this device must only be carried out by competent persons and in accordance with the latest recommendations. The Safety Hook point is to allow the use of a correctly rated secondary fixing, the main suspension must be from the main yoke located on the top of the unit.
4. **Power Switch –** On/Off mains override
5. **Earth Point –** As a Class I device this must be earthed, the earth point can be used when checking the earth continuity during periodic safety inspections. At no point should the earth be removed from this device.
6. **Cooling Fan –** This device uses a fan to maintain its operating temperature, this must be kept free of obstructions and cleaned as part of a periodic inspection routine. Cleaning can be done with a non-conductive brush and low power vacuum cleaner while the unit is switched off and isolated from the mains supply.
7. **Key Switch –** The key switch should only be operated by persons competent with laser operation. When not in use keys should be stored in a secure position away from the laser device.
8. **Function Dip Switches –** Select from either Sound Active, Auto or DMX modes. To set the unit to DMX mode simply set the DMX address using DIP switches 1 thru 9. For SOUND ACTIVE mode set DIP #10 to

on and the rest to off. For AUTO mode set DIP switches #9 & #10 to on and the rest to off.
For master/Slave modes the first unit in the chain would be set to Sound Active or Auto, the units acting as slaves would then be set to all DIP switches in the off position. The Slaves will automatically react to the signal sent by the Master unit.

0= OFF 1=ON X=OFF or ON										FUNCTION
#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	
X	X	X	X	X	X	X	X	0	1	**SOUND ACTIVE**
X	X	X	X	X	X	X	X	1	1	**AUTO MODE**
SET DMX ADDRESS FOR DMX MODE									0	**DMX/SLAVE**

9. **DMX Input/Ouput –** In DMX mode the unit will respond to standard DMX512 signals. The laser requires 5 channels for operation detailed in the table below:

Channel	Function	Value	Description
CH1	Mode	0-49	Blackout
		50-99	Static Patterns within DMX Mode
		100-149	Dynamic Pattersn within DMX Mode
		150-199	Sound active mode
		200-255	AUTO mode
CH2	Pattern Selection	0-255	52 static/dynamic patterns
CH3	Position in the X axis	0-255	Adjust beam position in X axis
CH4	Position in the Y axis	0-255	Adjust beam position in Y axis
CH5	Scan Speed	0-255	0 = Slow thru 255 = Fast
CH6	Dynamic Pattern Play Speed	0-255	0 = Slow thru 255 = Fast (ten steps)
CH5	Static Pattern Size	0-255	0 = Small thru 255 = Large

The table on the next page details the patterns available under DMX Channel 3 “Pattern Selection”. There are 52 patterns available for each mode (Static or Dynamic). The static patterns up to value 140 are size adjustable via DMX CH5 while the dynamic patterns are not adjustable in size.

DMX value	Static patterns	Dynamic patterns	DMX value	Static patterns	Dynamic patterns
0 ~ 4	circle	circle to big	130 ~ 134	christcross	dot diagonal move
5 ~ 9	dot circle 1	dot circle to big	135 ~ 139	chiasma line	hori line flex
10 ~ 14	dot circle 1	scan circle to big	140 ~ 144	hor-extend line	hori dot line flex
15 ~ 19	scan circle	circle flash	145 ~ 149	hori-shrink line	hori line move
20 ~ 24	horizontal line	dot circle flash	150 ~ 154	hori-flex line	hori dot line move
25 ~ 29	hori-dot line	circle roll	155 ~ 159	ho-flex dot line	vertical line move
30 ~ 34	vertical line	dot circle roll	160 ~ 164	ver-extend line	vert-dot line move
35 ~ 39	vert-dot line	circle turn	165 ~ 169	vert-shrink line	rectangle extend
40 ~ 44	45° diagonal	dot circle turn	170 ~ 174	vert-flex line	dot rectangle extend
45 ~ 49	dot diagonal	dot circle to add	175 ~ 179	ve-flex dot line	square extend
50 ~ 54	135° diagonal	scan circle extend	180 ~ 184	ladder line 1	dot square extend
55 ~ 59	dot diagonal	circle jump	185 ~ 189	ladder line 2	rectangle turn
60 ~ 64	V line 1	dot circle jump	190 ~ 194	ladder line 3	dot rectangle turn
65 ~ 69	V dot line 1	hori-line jump	195 ~ 199	ladder line 4	square turn
70 ~ 74	V line 2	hori-dot line jump	200 ~ 204	tetragon 1	dot square turn
75 ~ 79	V dot line 2	vertical line jump	205 ~ 209	tetragon 2	pentagon turn
80 ~ 84	triangle 1	ver-dot line jump	210 ~ 214	pentagon 1	dot pentagon turn
85 ~ 89	dot triangle 1	diagonal jump	215 ~ 219	pentagon 2	tetragon turn
90 ~ 94	triangle 2	dot diagonal jump	220 ~ 224	pentagon 3	pentagon star turn
95 ~ 99	dot triangle 2	short sector round 1	225 ~ 229	pentagon 4	bird fly
100 ~ 104	square	short sector round 2	230 ~ 234	wave line	dot bird fly
105 ~ 109	dot square	long sector round 1	235 ~ 239	wave dot line	wave flowing
110 ~ 114	rectangle 1	long sector round 2	240 ~ 244	spirality line	dot wave flowing
115 ~ 119	dot rectangle 1	line scan	245 ~ 249	many dot 1	many dot jump 1
120 ~ 124	rectangle 2	dot line scan	250 ~ 254	many dot 2	square dot jump
125 ~ 129	dot rectangle 2	45° diagonal move	255	square dot	many dot jump 2

Stand Alone Operation (Sound Active & AUTO Modes)

The mode allows a single unit to react to the beat of the music in the master mode.

1. Set dipswitch to select Sound Active or AUTO mode.

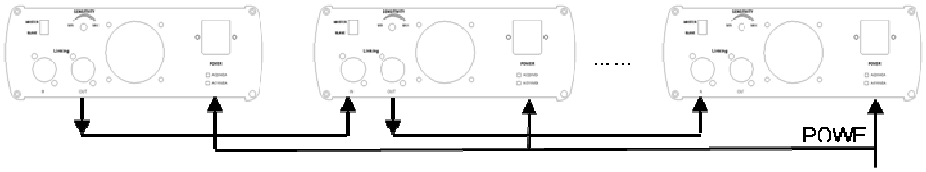
2. Power up the unit, the laser will then go through a reset cycle and begin operation.

3. The unit will react to the low frequencies of music via the internal microphone. Adjust the audio sensitivity knob on the back of the unit to make the unit more or less sensitive in sound active. The front panel has LED indicating for sound active.

Master Slave Mode

This mode will allow you to link up to 32 units together without controller.
1. Install the units in a suitable position (laying or appending).
2. Choose a unit to function as Master mode, set dipswitch to select Sound Active or AUTO
mode. The others must be set to Slave mode, set dipswitch to select Slave mode.
3. Use standard XLR microphone cable chain your units together via the XLR

connector
on the rear of the units. For longer cable runs we suggest a terminator at the last fixture.
4. Turn on the all units' power, the units begins reset, then the unit begins working. The
slave units will react the same as the master unit.
5. The units will react to the low frequencies of music via the internal microphone. Adjust the audio sensitivity knob on the back of the master unit to make the unit more or less sensitive in sound active. The panel has LED indicating for sound active.



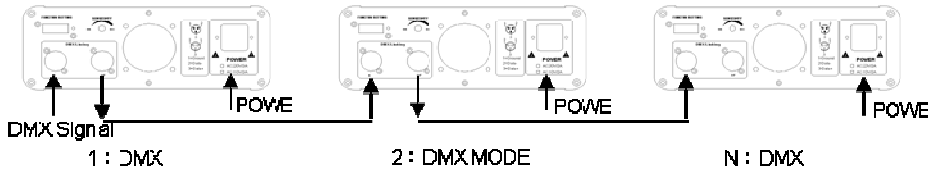
1:Master:Sound/AUTO 2：Slave N：Slave

DMX Operation

This mode allows you to use universal DMX-512 console to operate the laser.

1. Use standard XLR DMX cable chain your units together via the XLR connector
on the rear of the units. We recommend a terminator at the last fixture (ask your local dealer to supply a PULSE DMXTERM-3P)

2. Assign a DMX address to each the unit using dipswitches



3. Power up the unit, the laser will then go through a reset cycle and begin operation in DMX mode..
4. Use DMX console to control your units.

Operation:

- We recommend this product is used within a 4 hour duty cycle. To do this the unit should be operated for no more than 4 hours without then being left to cool to room temperature and held at this temperature for 15 minutes. This will prolong the life of the laser diode.
- In accordance with HSG95 this product is fitted with a key switch & active LED – the key switch is to allow operation of the device by persons who are responsible and are competent to do so.
- Do not operate in dusty or damp conditions. The cooling fan must be kept clean and free of obstruction to prevent overheating.

- Control of this unit is via the Sensitivity control knob – this will adjust how the unit reacts to bass notes and beats within the audio spectrum.
- Care should be taken to ensure this product is operated in accordance within the HSG95 guidelines.
- To generate the maximum effect lasers are best used in conjunction with haze machines.
- The front panel of this unit has a blue LED to indicate when it is active and detecting sound – if the sound ceases to be detected the unit will enter standby after 8 seconds.

Trouble Shooting:

Fault Description	Suggested Solution
No laser output	Check the power supply indicator on the front panel, if this is not lit firstly check the unit is powered up and connected to a live mains outlet. Check the mains On/Off switch and the safety Key Switch override.
	The lasers are protected by a fuse in the 13A-IEC cord and also one on the mains input IEC connector. Both fuses should be replaced by the same type and value.
	The lasers are sound activated – if the sound level is too low or the unit is on minimum sensitivity the unit may enter standby mode. Either increase the sensitivity or turn up the sound level. Care should always be taken when using PA systems etc as high SPL's can present a danger to your hearing.
	Assuming all of the above have been checked and the unit is still unresponsive please return the unit to the retailer from whom you originally purchased the unit.

- If the unit is not responding
- If the Power Supply indicator light is illuminated indicating the mains supply is present and the unit does not respond check the

Compliance

When this product reaches the end of its life, do not dispose with household waste. See www.recycle-more.co.uk for details of how to dispose of PULSE products in an environmentally sound fashion, or contact PULSE directly via www.pulse-light.co.uk

Warranty

Pulse products are warranted, by Pulse, against manufacturer defects for a period of one year from the original date of purchase. This warranty is limited to manufacturer defects, in either materials or workmanship. PULSE, or any other worldwide divisions of Premier Farnell PLC, is not responsible for any consequential or inconsequential damage to any other component, structure or the cost of installation or removal of said items. Defective items should be returned to the retailer from whom they were originally purchased.

This warranty will not cover damage due to improper use. This equipment contains no user-serviceable parts. Repair by any persons other that those appointed as PULSE service agents may void the warranty.

For questions or specific information regarding warranty replacement or repair, contact:

PULSE
www.pulse-light.co.uk